## Estimation and Planning Mistakes

- Underestimating complexity, cost, and/or schedule
- Use historical data and expert judgment to es timate accurately.
- Abandoning planning under pressure
- Stick to planning to avoid chaotic code-and-fix mode.
- Overly aggressive schedules
- Set realistic schedules based on historical data and project complexity.
- Wasting time in the "fuzzy front end"
- Streamline the approval and budgeting proces

# Communication and Stakeholder Engagement

- Poor communication
- Hold regular meetings and ensure clear documentation.

### Not engaging stakeholders

- Include stakeholders in planning and review ses
- Insufficient user input
- Ensure active involvement of end-users throughout the project.

#### Project Management Mistakes

- Lack of oversight/poor project management
- Appoint experienced project managers and con duct regular reviews.
- Adding developers to a late project
- Avoid adding developers late in the project prevent further delays.

#### Quality and Risk Management Mistakes

- Poor quality workmanship
- Implement quality assurance processes and conduct regular code reviews.
- No risk management
- Identify risks early and develop mitigation plans.
- Ignoring system performance requirements
- Define and monitor performance requirements throughout the project.
- Poorly planned/managed transitions
  - Develop detailed transition plans and involve all relevant parties.

#### Agile Manifesto

- Individuals and interactions over processes and tools.
- Working software over comprehensive documentation.
- Customer collaboration over contract negotiation.
- Responding to change over following a plan.

#### Agile Principles

- Satisfy the customer with continuous delivery.
- Welcome changing requirements.
- Frequent delivery of working software.
- · Daily collaboration between business and develop-
- Build projects around motivated individuals.
- Face-to-face conversation for communication.
- Working software as progress measure.
- Promote sustainable development.
- Continuous attention to technical excellence
- Simplicity is essential.
- Best architectures emerge from self-organizing teams.
- Regular reflection and adjustment

- Product Owner:
- Maximizes product value.
- Develops and communicates Product Goal.
- Creates and prioritizes Product Backlog.
- Ensures transparency and understanding Backlog.
- One person, not a committee, with leadership
- role
- Scrum Master:
  - Facilitates Scrum process, resolves impediments.
  - Creates self-organization environment.

  - Captures empirical data, shields team from dis tractions
  - Enforces timeboxes, keeps artifacts visible. - Promotes improved practices, has leadership
- Development Team:
- Develops product, self-organizing, cross functional.
- No titles, no sub-teams, no specialized roles.
- Long-term, full-time membership, 7 ± 2 mem-

# Scrum Events

- Sprints
- Sprint Planning Meeting
- Daily Scrum Meeting
- Sprint Review Meeting Sprint Retrospective

#### Scrum Artifacts

- Product Backlog
  - Prioritized list of features.
  - Updated regularly.

Updated daily.

Burndown Charts

Updated daily.

project management.

predictability.

Visible to all stakeholders. Owned by Product Owner.

Owned by Development Team.

- Decomposed from Product Backlog.

- Shows progress towards Sprint Goal.

Used to forecast project completion

- Helps identify issues early.

lems with no known solution.

Accidental vs Essential Complexity

MEI (minimum essential information).

Best/Good/Recommended Practices

Created during Sprint Planning Meeting.

Graphical representation of work remaining.

Essential complexity: - Inherently difficult prob

Necessary accidental complexity: - Example

Unnecessary accidental complexity: - Waste, Lean

"Best Practice": - Consistently improves produc

tivity, cost, schedule, quality, user satisfaction.

Best Practices (Glass, 2004): - Development teams

repeat mistakes. - Best practice documents regur-

gitate textbook material. - Growing field's wisdom

- Small co-located team.

Agile Sweet Spots

Dedicated developers.

Experienced developers.

- Tools for testing and configuration management.
- Easy user access.
- Sprint Backlog Short increments and frequent delivery. List of tasks for current Sprint.